

LANDSAT MONTHLY UPDATE

February 2003

The Landsat Program is managed by the U.S. Geological Survey under authority established by Presidential Decision Directive NSTC-3.

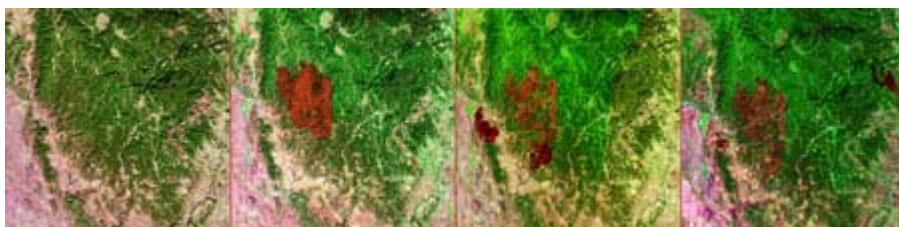
Program News

IGS Metadata IGS metadata from Brazil, Canada, Australia, South Africa, China, Argentina, and Europe continue to be archived successfully. Matera, Italy began sending metadata collected by their retired ground station in Fucino, Italy (FUI) on February 5, 2003. As of February 28, 2003, there were 16,092 L7 IGS subintervals archived for 260,330 Landsat 7 Worldwide Reference System (WRS) scenes. Maspalomas, Spain (MPS) is expected to begin archiving their metadata at EDC very soon. Hatoyama, Japan (HAJ) is expected to resume sending metadata to EDC by this spring.

Technical News

Data Validation During the month of February, the Cordoba Argentina station provided the USGS with RCC data for their scheduled biannual revalidation. The biannual revalidation was successful. Preliminary testing continues with the L1G Product Validations. At this time initial product validations have been completed for Japan (Hiroshima), Argentina, Australia (Alice Springs), China and Thailand.

Landsat web site Recent updates to the Landsat web site (<http://landsat7.usgs.gov>) are popular with web users. In January 2003, the Landsat web site averaged over 20,000 hits and 906 visitors per day. The most popular area of the web site is the improved Image Gallery (<http://landsat7.usgs.gov/gallery>). Landsat staff are continually adding interesting images from Landsat with descriptions of the area. Recently, several change-over-time sequence images were added to the gallery. An interactive map is also now available to help viewers choose an image geographically. Watch this site for more interesting Landsat images!



Black Hills, South Dakota

This series demonstrates the amount of change we can identify over a short four-year period. Fire has the ability to change our landscape tremendously, and a good example is the Black Hills of South Dakota. Compare the landscapes as each fire season profoundly influenced the ecology of the Black Hills. The fire scars are clearly visible in dark red. Using the short-wave infrared (bands 543), we can more clearly discern the fire scars from the green coniferous forests surrounding them.

Sharpening Landsat with SPOT

Editor's note: Landsat data have provided opportunities for creative applications and merging of data sets. Mr. Ahern has offered the following example for illustration and discussion. For details, please contact Mr. Ahern at f-ahern@nrtco.net

Many splendid images have been produced by sharpening Landsat 30 m data with 10 m panchromatic imagery from the SPOT series of satellites. Recently, SPOT-5 was launched with an improved panchromatic sensor that has a spatial resolution of 5 m and a pixel spacing of 2.5 m. What happens when one sharpens a Landsat image with these new panchromatic data? The results are stunning! TerreVista Earth Imaging has pioneered the use of SPOT-5 panchromatic data to sharpen Landsat imagery. In Figure 1 we see an image that was created by merging these two data types, using bands 1, 2 and 3 of the ETM+ to produce a natural color image. The image is 47 x 40 km in size, with a pixel spacing of 2.5 m. When reproduced in a small size, as shown here, it looks like a familiar Landsat

scene. But when we zoom in to the area of downtown Ottawa covered by the red rectangle, we see far more detail than ever before, as shown in Figure 2. Roads, city blocks, and large buildings are all clearly seen. We even see a tour boat cruising around a bend in the scenic Rideau Canal. The image is even more spectacular when viewed on a computer enough processing power to allow one to roam and zoom at will over the full area. We expect that this capability will open up new commercial and non-commercial opportunities for earth observation technology.



Figure on left: Landsat-7 ETM+ image acquired July 5, 2000 merged with SPOT-5 HRG panchromatic image acquired September 12, 2002. SPOT image © 2002 CNES, licensed by Iunctus Geomatics Corp, Lethbridge, Alberta, Canada.

Figure on right: Enlargement of downtown Ottawa showing the level of detail that is present throughout the full scene. The anomalous red and blue colors appear to be caused by residual mis-registration of the two images, and will be removed with improved registration.

Meetings

LTWG-13

The Landsat Technical Working Group (LTWG-13) meeting will be held in Cordoba, Argentina on March 31- April 3, 2003. The Comision Nacional de Actividades Espaciales (CONAE) will host the sessions. Mr. Steve Covington is coordinating and planning for the meeting. Further information and registration can be arranged by contacting him at steven.covington.1@gsfc.nasa.gov.

QMM #19

The 19th Quarterly Management Meeting with USGS and NASA management personnel was held on February 26, 2003. Flight operations and USGS EROS Data Center management staff attended the meeting in Sioux Falls as well as NASA management via telecon. This meeting focused on interagency issues and other status reports for U.S. operations of Landsats 5 and 7.

The Landsat monthly update is an informal communication tool, prepared monthly and distributed electronically to USGS Landsat partners, to provide information about Landsat activities and related topics of interest. If you have any ideas, comments, corrections, or successes you would like to share with the Landsat community, please contact Ronald Beck, USGS Landsat team, at the following e-mail address: beck@usgs.gov.

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